Book Reviews

Analytical Absorption Spectroscopy: Absorptimetry and Colorimetry. M. G. Mellon, Ed. New York: John Wiley; London: Chapman & Hall, 1950. 618 pp. $9.00.

In the words of the editor, "The present volume on absorptimetry and colorimetry has been written almost entirely from the viewpoint of what seems of most practical concern in a modern chemical testing and analytical laboratory." The nine chapters with their contributing authors include:

"Chemistry: Preparation of Systems for Absorptimetric Measurement," M. L. Moss; "Physics: General Principles of Absorptimetric Measurements," M. G. Mellon; "Color Comparimeters," W. B. Fortune; "Filter Photometers," R. H. Muller; "Spectrophotometers: Ultraviolet and Visible Regions," K. S. Gibson; "Photographic Methods," E. R. Holliday; "Applications of Ultraviolet and Visual Spectrophotometric Data," E. I. Stearns; "Spectrophotometers: Infrared Region," L. J. Brady; and "Measurement and Specification of Color," Deane B. Judd.

The reader will find that, in general, the discussions are limited to applications of the methods with little more than a brief introduction to the underlying theories. Ample references are given, however, if it is necessary to obtain information in greater detail than is justified in a general reference book of this type. Of special importance to the analytical chemist is the careful consideration given to the sources of errors that may be encountered and the proper means for minimizing their effects on analytical results.

Another indication that the authors had the welfare of the analytical chemists at heart is the attention given to the standardization of nomenclature. Workers in the field can appreciate the task involved in compiling a book of this type when the situation is one which may be described as virtually a state of anarchy, with each worker steadfastly adhering to his own code. Throughout all this the analyst has been but a voice crying in the wilderness. It is hoped that he may derive some comfort from the care with which the nomenclature has been handled here. Even so, one complete chapter is based on another system (chapter 6).

Obviously, one may expect considerable overlapping in subject matter from chapter to chapter when each is written by a different author, but it is sufficiently extensive in this case to suggest that more care could have been exercised in the editing. As a case in point, there is little reason that one should find a more complete description of filters in the chapter on spectrometers than he finds in the chapter on filter photometers. The net result, then, is that each chapter is more or less complete unto itself which, after all, may be of some advantage.

For the most part, the volume is up to date, with references as recent as 1949, and the subject matter is, on the whole, well presented. It is regrettable, however, that more recent information is not included in the chapter on infrared spectroscopy. For example, one is disappointed to find that the discussion on nondispersive analyzers is limited to the negative filter type, with no mention of the later use of pneumatic detectors. Similarly, the Golay infrared detector, which has met favor with many workers, has been neglected. The discussion of techniques involved in applications of the method might also have been developed more thoroughly.

Although these and other minor shortcomings may be found, the various aspects of the field have been well summarized. This is especially true of the chapters on chemistry, spectrophotometers (VS and UV), spectrophotometric data, and the measurement and specification of color. It is also gratifying to find that the photographic method has not been overlooked and that its usage has been ably covered. For these reasons, the analyst will find this to be a useful reference book on the application of absorption spectroscopy.

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Das Polarisationsmikroskop als Messinstrument in Biologie und Medizin. Hans H. Pfeiffer. Braunschweig, Germany: Friedr. Vieweg, 1949. 94 pp. DM 8.50.

Chemische Spektralanalyse, Vol. I. 4th ed. Wolfgang Seith and Konrad Ruthardt. Berlin, Germany: Springer-Verlag, 1949. 173 pp. DM 16.50.

The polarizing microscope, long an indispensable instrument for petrographic research, has become of increasing importance in other fields of science. The present brief monograph was written to acquaint biologists with qualitative and quantitative methods of polarizing microscopy as employed in the study of biological objects. In the restricted space of 94 pages the author gives a competent treatment of the subject which, as he sees it, will become of steadily increasing importance.

After a discussion of fundamental concepts and definitions and of the different types of birefringence, especially those produced by oriented submicroscopic elements, the construction and operation of the polarizing microscope are described in some detail. The second chapter, representing methodology, deals with the preparation of biological samples for measurements with polarized light. The third chapter contains metronomic details regarding quantitative measurements and the use of different types of compensators for the exact determination of phase differences.

This handy little volume may be of great value for biologists who want to obtain reliable information in this field.